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Capstone project

Feasibility and Strategic Positioning of a Mechanical and Energy Engineering Firm in Mallorca

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ABSTRACT

This capstone project evaluates the feasibility of launching an independent engineering firm in Mallorca specializing in mechanical, electrical, energy, and water-related services, with a focus on the hospitality and infrastructure sectors. The study combines market analysis, Design Thinking, customer interviews, hypothesis validation, competitor benchmarking, business model design, financial projections, and risk assessment to determine whether a lean, specialized engineering firm can address an underserved market niche in an insular economy.

The opportunity identified is based on a clear mismatch between demand and available engineering capacity in Mallorca. The island faces growing needs in energy efficiency, renewable integration, water management, desalination, HVAC upgrades, and infrastructure modernization, while local engineering services remain fragmented and often insufficiently specialized. This gap is reinforced by the constraints of insularity, including material lead times, limited skilled labor, regulatory complexity, and the need for local knowledge in permits, suppliers, and project execution. Current alternatives like large mainland engineering firms, small local offices, installers, or limited internal hotel teams, do not fully address the needs of mid-scale projects that are too complex for installers but too small for large engineering groups.

The most attractive target niche is composed of small and medium-sized hotels, agrotourism properties, public administration bodies, and large off-island engineering firms requiring local execution support. The core segment is hospitality assets without in-house engineering teams, especially projects between €100,000 and €500,000. These clients require technical upgrades but struggle with supplier coordination, permitting, unclear ROI, cost overruns, and operational disruption. The estimated Total Addressable Market is €90-100 million annually, the Service Available Market is €15-18 million, and the realistic Serviceable

Obtainable Market ranges from €150,000-€180,000 in a conservative scenario to €750,000-€900,000 in a target scenario.

The proposed solution is a local engineering firm that acts as a single technical interlocutor across the full project lifecycle: initial diagnosis, feasibility analysis, basic and detailed engineering, permitting, contractor coordination, EPC supervision, commissioning, and subsidy support. Its value proposition is based on technical specialization, local regulatory knowledge, ROI-driven decision-making, transparent budgets, predictable timelines, and phased execution to avoid disrupting hotel operations. The firm is positioned as a lean, cost-efficient alternative to large engineering groups and as a more technically rigorous partner than non-specialized installers or construction-led refurbishment firms.

Qualitative validation confirms the relevance of this positioning. Interviews with hotel managers, hotel groups, agrotourism representatives, and a public-sector auditor showed that supplier selection in Mallorca is strongly trust-based and driven by previous successful relationships. Hotels that remain open year-round must execute works through phased or sectorized interventions, while seasonal hotels face strict winter execution windows.

From a financial perspective, the project is feasible but exposed to execution risk during the first year. Initial CAPEX is estimated at €11,300, mainly for hardware, CYPE software, legal registration, branding, and contingencies. Fixed operating costs are approximately €17,982 in Year 1 and €19,482 in Year 2, while variable costs are mainly driven by subcontracting, site visits, and project-specific resources. Revenue is projected at €38,000 in Year 1 and €289,625 in Year 2 under the conservative base case, with cumulative cash flow turning positive in month 14. The required initial cash buffer is estimated at €23,500, and all scenarios analyzed reach profitability by Year 2.

The project concludes that launching the firm is strategically and financially viable, provided the initial phase focuses on credibility and disciplined execution. Positioned initially as a specialized local advisor and EPC coordinator for mid-scale hospitality and infrastructure, the firm will progressively scale toward full EPC delivery and broader expansion across the Balearic Islands, aiming to become the benchmark for mid-scale engineering in island economies.

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1 INTRODUCTION

1.1 PURPOSE OF THE PROJECT

To evaluate the feasibility of launching an independent engineering firm in Mallorca specializing in mechanical, electrical, and energy-related services, with the potential to expand to the Balearic Islands.

1.2 CONTEXT AND JUSTIFICATION

This project explores the growing opportunities for engineering entrepreneurship in Mallorca and the Balearic Islands, driven by a surge in demand for expertise in renewable energy, desalination, and energy efficiency. Despite this increasing need, there is currently a significant gap in the market with unmet demand for qualified engineers, providing a unique opening for specialized firms to navigate the region's regulatory complexities and infrastructure requirements. By synthesizing market analysis with a feasible business model, the study addresses a notable lack of academic research on technical start-ups in insular economies, offering a strategic roadmap for professionals looking to position themselves within these underserved niches.

1.3 METHODOLOGICAL APPROACH

This project follows a Design Thinking methodology, applied to understand customer needs and define the problem through interviews and customer personas. Design Thinking principles are used to structure and validate business hypotheses through iterative testing and market feedback.

In addition, analytical tools such as the estimation of TAM (Total Addressable Market), SAM (Service Available Market), and SOM (Serviceable Obtainable Market), as well as

Porter’s Five Forces, have been employed to assess the market environment. The Value Proposition Canvas has been used to define the offering, and the business model has been designed following the Lean Canvas framework.

Throughout the project, hypotheses have been continuously validated, and a comprehensive evaluation of the financial and operational feasibility of the proposed venture has been conducted.

2 CONTEXT AND PROBLEM DEFINITION

2.1 INDUSTRY CONTEXT

The Balearic economy is heavily dominated by services, but the industrial sector maintains a relevant base that is highly concentrated in the metropolitan areas of Palma, particularly in Son Castelló and Can Valero, which stand as the most important industrial estates in the Balearic Islands. An article from elDiario notes that these estates bring together more than 2,000 companies and 20,000 workers, contributing approximately 20% of the Balearic GDP. It also points out that there are 53 industrial estates in the Balearic Islands and that the sector is demanding modern infrastructure, fewer administrative hurdles, and a greater focus on exports and sustainability. [1]

Institutional literature from the CES (Economic and Social Council of Spain) further shows that Balearic industry has historically suffered from problems related to insularity, transport costs, energy dependency, and external competitive pressure, all of which limit its development compared to tourism. The same document explains that the regional industrial sector's openness is relatively low and that the weight of local demand is very high, a typical characteristic of island economies. [2]

The regional government also treats Industry and Industrial Estates as a strategic area for competitiveness, safety, and infrastructure [3], while the University of the Balearic Islands is expanding its technical offer with Mechanical Engineering, which points to a clear need for both training and industrial capacity in the islands. [4]

Mechanical engineering in Mallorca is better understood as applied engineering than as heavy industry: HVAC, plumbing, sanitation, maintenance, pressure systems, energy efficiency, building automation, and support for hotels, retail, and light industry. Job listings in Palma also show demand for budgeting and site supervision roles in mechanical installations, HVAC, plumbing, sanitation, and renewables, which fits a market closely tied to tourism infrastructure, where maintenance and upgrades are constant.

The Spanish Energy-as-a-Service (EaaS) market is undergoing significant expansion, valued at USD 2.15 billion in 2024 and projected to reach approximately USD 4.18 billion by 2030, reflecting a CAGR of 12.2%. [5] This growth is driven by a nationwide push toward decarbonization, with the renewable share in Spain's electricity mix recently exceeding the 55–61% range. This transition creates a high demand for advanced engineering services and integrated energy solutions. [6]

While mainland Spain shows robust growth, the energy landscape in Mallorca presents a more complex and urgent scenario due to its insular nature. Historically, the island has been heavily dependent on fossil fuels (primarily at the Es Murterar plant). However, according to IDAE, Mallorca is now a focal point for the "Energy Transition in the Balearic Islands" program, which prioritizes the democratization of energy through self-consumption, the promotion of renewable energy communities, and the total decarbonization of the archipelago by 2050. The goal is to transform Mallorca into a "living lab" for sustainable smart-island technologies. [7]

Data from Red Eléctrica de España (REE) highlights that Mallorca operates within a "Non-Peninsular Electrical System," which is inherently more vulnerable than the mainland grid. To mitigate this, the subsea electrical link between the peninsula and Mallorca (the "Cometa" project) is vital for security of supply. Despite this interconnection, Mallorca must maximize local renewable generation and storage capacity to reduce its carbon footprint and ensure energy independence, addressing the specific technical challenges of maintaining frequency and voltage stability in an isolated system. [8]

2.2 PROBLEM STATEMENT

The engineering services market in Mallorca is characterized by a significant shortage of specialized firms capable of integrating technical depth with operational flexibility and cost efficiency. Current offerings in mechanical, electrical, and energy systems remain fragmented and non-specialized, resulting in a general lack of comprehensive engineering capacity on the island. This deficiency is further compounded by evolving regulatory and sustainability requirements that local providers are currently unable to fully support.

Spain faces a gap of ~€200 billion in priority investments for water, energy and environmental infrastructure, showing significant unmet infrastructure needs. [9] Additionally, the energy transition requires 3.900–5.650 new energy professionals in Spain in the next 3–5 years, highlighting shortage of technical expertise. [10] Specially in Mallorca, there is a lack of engineering services on the island. Local engineering demand in Mallorca outpaces supply; professional bodies note insufficient local engineers for infrastructure needs. [11]

These shortages of engineers in Mallorca are reflected in the impacts they have on stakeholders. For example, to channel a torrent that caused a tragic flood eight years ago, construction is not expected to begin until 2028, representing a delay of 10 years. [12]

The College of Engineers highlights that one of the main concerns within the sector is the shortage of professionals. "There are not enough engineers in the Balearic Islands, and attracting talent from outside remains challenging. We are at a critical point, as engineers are essential to plan and manage infrastructure projects," the Dean stated, warning about the impact this deficit may have on the ability of public administrations to deliver strategic initiatives. [13]

Additionally, in 2024, 88 public tenders were left without bidders, representing a total value of €81.6 million, partly due to "unfeasible" deadlines and outdated budgets. [14]

That problem is faced by the following users:

- Public Utilities & Government: They need upgrades in water and energy systems. They prioritize project quality and regulatory compliance. They seek to engage a local company; however, there is a lack of available providers.

- Hotels & Tourism: They need infrastructure resilience and energy costs reduction. They prioritize cost savings, price, and project timelines, as they must remain available during the high season.
- Big engineering firms from outside the island: Some engineering firms from mainland Spain that carry out projects on the island, due to the lack of local engineering capacity, often experience the absence of a local partner or engineer who can support them.

The users can be segmented by sector (public, industrial, energy, and tourism), by project type (design, implementation, EPC) or by size (small/medium projects vs large infrastructure).

This problem is driven by energy transition policies, renewable deployment targets, and water scarcity challenges. This has high relevance in island environments with infrastructure constraints. There is a stable demand from public tenders, industrial upgrades, and energy projects. A scalable opportunity is envisaged from Mallorca to Balearic Islands and Valencia.

Currently, the problem is being solved by hiring large national engineering firms from mainland Spain. Using small local engineering offices with limited specialization. Some medium- and large-sized hotels have internal technical teams with limited capacity.

The competitive landscape is characterized by high-cost large firms with limited local presence, small local players focused on traditional installations, and a limited number of firms specialized in the integration of energy and mechanical systems.

2.3 DEFINITION OF KEY HYPOTHESIS

- I believe that engineering projects with a total investment of between 100,000 and €500,000 are underserved because they are too small for large engineering firms and too complex for installers.

- Large off-island engineering firms often require local partners for supervision, permitting, and detailed engineering.
- Small and medium-sized hotels and agrotourism in Mallorca lack in-house engineering capabilities and therefore rely on external firms for energy, mechanical, and water-related projects.
- Hotel owners perceive engineering and EPC projects as complex and risky due to regulatory requirements, permitting processes, and coordination with public authorities.
- Hotels are more willing to undertake energy or water efficiency projects when part of the investment is co-financed through public subsidies or incentive programs.
- Hotels prefer local engineering partners who understand island-specific constraints (permits, suppliers, logistics) over mainland-based firms for small and medium-sized projects.
- Hotel decision-makers prioritize operational savings (energy and water cost reduction) over innovative technologies when evaluating engineering projects.
- Sustainability goals and ESG commitments are becoming a key driver for hotels to initiate energy and water infrastructure upgrades.
- Hotel managers value having a single technical interlocutor who can manage engineering, suppliers, permits, and contractors under a turnkey EPC approach.
- Repeating projects and long-term relationships are common once trust is established between hotels and engineering service providers.

2.4 VALIDATION OF KEY HYPOTHESIS

This chapter validates the research hypotheses through qualitative interviews with key industry stakeholders, including the manager of a 77-room hotel in Palma, the executive responsible for a hotel group with properties of 252 and 278 rooms, and the manager of a 162-room hotel in Palma. The primary data collection also involved the head of the

Agrotourism department at the Mallorca Hotel Federation and a financial auditor from the Consell de Mallorca.

Based on the interviews conducted, the following conclusions have been identified regarding technical improvements and engineering management in the Balearic hotel sector:

- **Trust-Based Relationships and Reputation**: Selection criteria are primarily driven by previous successful collaborations and long-term trust. The 77-room Palma hotel and the 162-room hotel both prioritized companies they had worked with before. There is a strong "word-of-mouth" culture; as noted, poor performance leads to a loss of future contracts within the local network.
- **Operational Constraints and Seasonality**: Year-round establishments (Palma hotels) must execute works through "sectorization" to remain operational without losing revenue. Conversely, seasonal hotels face high-pressure deadlines, as all technical improvements must be strictly completed during the winter closure.
- **Financial Barriers and ROI Concerns**: While there is a clear shift toward energy efficiency (PV panels, HVAC, and boiler upgrades), agrotourism owners express significant concern regarding the Return on Investment (ROI). Furthermore, administrative "red tape" and the exhaustion of public funds often discourage properties from applying for smaller grants.
- **Deficiencies in Planning and Execution**: The audit perspective from the Consell de Mallorca highlights a systemic lack of rigorous planning and post-execution verification. This is compounded by the difficulty in securing qualified labor and the logistical challenges of importing materials to the islands.
- **Focus on Sustainability and Digitalization**: All interviewed stakeholders confirmed recent or planned investments in water recycling, energy efficiency (switching from diesel to GLP or aerothermal), and digitalization (Wi-Fi infrastructure and home automation) to enhance both guest experience and operational control.

- **Hybrid Technical Management Models**: Hotels do not rely solely on external providers. The 77-room hotel utilizes a mix of internal technical staff (family architect) and external contractors. Similarly, the other group employs an independent freelance engineer to oversee project direction, ensuring a layer of specialized supervision between the property and the installation company. Consequently, the hotel had to coordinate with several interlocutors, increasing management complexity.
- **Prioritization of Water Scarcity and Circularity**: Beyond energy, water management has become a strategic priority due to Mallorca's environmental context. This is evidenced by the 162-room hotel replacing osmosis with filtration to eliminate water waste, and another group implementing systems to reuse greywater from bathrooms.
- **Logistical Fragility due to Insularity**: one of the hotel groups explicitly cited material lead times and the challenges of "orders coming from outside" as primary complications during the execution phase.
- Investments are increasingly focused on internal operations rather than just guest comfort. For example, the 77-room hotel upgraded its Wi-Fi infrastructure specifically to improve internal hotel management services, and agrotourism stakeholders are beginning to explore Artificial Intelligence (AI) for future operational optimization.
- Engineering choices are being driven by lifecycle costs and material resilience. The 77-room hotel is replacing traditional iron boilers with nylon and PVC piping to better withstand high temperatures and prevent corrosion, reflecting a move toward more durable, low-maintenance engineering solutions.
- Evidence provided by the Auditor of the IMAS (Consell de Mallorca) highlights a significant investment capacity focused on social infrastructure, specifically the refurbishment of elderly care facilities and youth centers.

3 MARKET ANALYSIS

3.1 MARKET SIZE: TAM, SAM, SOM

3.1.1 TOTAL ADDRESSABLE MARKET (TAM)

The TAM is estimated at **€90–100 million**, representing the total annual value of engineering, EPC, and technical services demand in Mallorca related to the energy transition, water infrastructure, and hospitality assets. This macro-level figure is justified by the convergence of those major sectors:

- Public Water Infrastructure: The Balearic Government, through ABAQUA, manages continuous large-scale hydraulic and desalination infrastructure across the islands, which represents recurring multi-year engineering demand.[15] The Balearic Government has launched the process to design three new desalination plants in Mallorca, Menorca and Ibiza, with a base tender budget of €2.9 million for preliminary studies, detailed engineering and full administrative processing of the works. [16]
- Port electrification: In 2024, a project was announced for the Port of Palma to install a green hydrogen fuel cell to supply electricity to the Maritime Station, with a tender budget of €760,000. [17]
- Large-Scale Hotel Infrastructure: High-complexity energy projects, such as the integration of fuel cell systems in large hotels (e.g., Iberostar Bahía de Palma), contribute significantly to the technical service volume. [18] This project was carried out by an engineering firm based in Seville. This supports the hypothesis that, due to the lack of engineers on the island, hotels often need to seek providers from outside the island. The cost of this project is not publicly known; however, it can be estimated based on the Port of Palma project, given their similarities. Using a linear approximation based on the fuel cell capacity, the cost is estimated at €600,000.

- SME and Agrotourism Sector: There is a high volume of small-scale turnkey EPC projects for agrotourism and medium hotels, typically valued between €100,000 and €500,000 per intervention. Based on the interviews conducted, it is understood that small and medium-sized hotels undertake an EPC project every 3–4 years. Therefore, considering that there are 281 hotels in Mallorca, approximately 50–90 hotels carry out an EPC project each year. This represents a total annual value ranging between €5 million and €40 million. Many of these projects are identified through the FEHM (Federación Empresarial Hotelera de Mallorca)[19]. In addition, a significant number are co-financed, which makes demand visible through public aid and subsidy platforms such as IDAE. [20]

3.1.2 SERVICE AVAILABLE MARKET (SAM)

The SAM focuses on the specific portion of the TAM addressable by a local engineering firm specializing in energy and water, calculated at **€15–18 million** per year. It has been considered that my resources are limited and that very large projects require larger firms. For such projects, large engineering companies from mainland Spain could subcontract me as a local engineering partner to support their execution. This figure is derived from the following explicit components:

- Desalination & water engineering: This is anchored by specific public tenders, such as the €2.9 million base budget for the preliminary studies and construction projects of three new desalination plants in Mallorca, Menorca, and Ibiza.
- Hotel Energy & EPC (€10–12M): This includes basic and detailed engineering, MEP, and commissioning for the hospitality sector.
- Outsourced Demand: The calculation accounts for the fact that small and medium-sized hotels and agrotourism typically lack in-house engineering teams and must outsource projects like PV self-consumption, heat pump installations, and water treatment systems.
- Strategic Subcontracting: A key objective is to position the firm as a local engineering and site-supervision partner for large mainland engineering firms. Many

large-scale projects in Mallorca are currently awarded to external companies, such as the Seville-based firm that handled the Iberostar fuel cell project, leaving a gap for local partners to provide on-site expertise, permitting, and legalization services

3.1.3 SERVICEABLE OBTAINABLE MARKET (SOM)

The SOM represents the 1% to 5% share of the SAM that the firm intends to capture realistically. The rationale for these percentages is based on a targeted entry strategy rather than broad competition. Then analyze both scenarios:

- <u>Conservative Scenario (1% or €150k–€180k)</u>: This reflects a focus on small turnkey EPC projects for agrotourism and acting as a local agent for one or two major external contracts.
- <u>Target Scenario (5% or €750k–€900k)</u>: This assumes a successful partnership model with architecture firms (e.g., EPIC or LF91) and securing a recurring role in public water engineering tenders as a local specialist.

4 CUSTOMER ANALYSIS

4.1 CUSTOMER SEGMENTS IDENTIFICATION

Medium and Small Hotels: The target profile comprises independently owned hotels or small chains ranging from 30 to 200 rooms. These establishments lack an internal engineering team, with decision-making authority typically held by the owner, general manager, or operations director. Technical projects involving energy, HVAC, and water systems are executed on a regular cycle, occurring approximately every three to four years.

The primary drivers for these projects include the reduction of operational costs related to energy and water, as well as the assurance of regulatory compliance. Furthermore, these organizations seek to access subsidies and financing while minimizing disruptions to hotel operations. Given their lack of in-house technical expertise, they prioritize trust-based, relationship-driven partnerships to manage these initiatives.

Agrotourism & Rural Boutique Accommodations: ranging from 8 to 25 rooms, typically managed as owner-operated businesses with limited internal resources. These establishments are characterized by the inherent technical and structural constraints of historic or ageing buildings, paired with a limited investment capacity. Despite these challenges, there is a strong strategic focus on sustainability and brand positioning to drive competitive advantage. The primary objectives are to reduce energy dependency and secure public subsidies, navigating landscapes often complicated by complex rural permitting and administrative hurdles. The pain points for any proposed interventions include strict budget constraints and sensitivities regarding long-term payback periods.

Public Administration & Governance: responsible for overseeing large-scale energy and water infrastructure programs. Led by head of department or officer, these organizations prioritize regulatory compliance, transparency, and the maximization of environmental and social impact over profit-driven outcomes. Their operational landscape is defined by formal, tender-based procurement processes that place a high premium on technical documentation, official certifications, and proven reliability. However, these entities often face significant administrative complexity and slow procurement cycles, necessitating solutions that mitigate the risks of non-compliance and political scrutiny while ensuring the efficient management of public funds.

Large Engineering Firms: mainland or international engineering firms engaged in the execution of large-scale infrastructure projects in Mallorca. These organizations often operate without a permanent local presence, creating a distinct need for strategic local partnerships to manage regional permitting, provide on-site supervision, and deliver detailed engineering expertise. While these firms are not classified as core customers, they represent significant subcontracting opportunities, particularly for navigating the unique coordination challenges inherent in island environments. Consequently, the model positions these entities as key collaborators to ensure project feasibility and local regulatory alignment.

4.2 CUSTOMER PERSONAS

4.2.1 THE INDEPENDENT HOTELIER (MEDIUM AND SMALL HOTELS)

This segment focuses on owners and general managers of medium and small-sized hotels that lack internal engineering departments. A representative profile is María, a 42-55-year-old professional with a degree in Business Administration or Tourism Management. She owns a 45-room family hotel in Mallorca and is responsible for financial management, renovations, and investment decisions.

Because the hotel does not have an internal technical team, María relies entirely on external providers for engineering projects. Her primary challenges include rising energy costs, increasing regulatory pressure regarding sustainability, and the difficulty of coordinating multiple suppliers. Her strategic objectives are to reduce operational costs and ensure compliance while maintaining guest experience. Key pain points involve a fear of cost overruns, uncertainty regarding Return on Investment (ROI), and complex bureaucracy.

Consequently, she seeks a trusted local partner who can provide turnkey solutions, clear ROI calculations, and predictable project timelines.

4.2.2 THE AGROTOURISM OPERATOR

This profile represents agrotourism and rural boutique accommodations in Mallorca, typically ranging from 8 to 25 rooms. A typical persona is Joan, an owner-operator aged 38-55 with a background in tourism, agriculture, or architecture. He manages a 14-room heritage property that balances rural tradition with eco-friendly hospitality.

Joan faces significant technical constraints due to the age of his building and limited grid access. His investment capacity is more restricted than larger hotels, making him highly sensitive to payback periods and the aesthetic impact of technical installations. His objectives include reducing energy dependency, obtaining sustainability certifications, and accessing public subsidies. His primary pains are the complexity of rural land permits and a general distrust of large engineering firms. To meet his needs, he requires an engineering partner familiar with rural regulations who can offer scalable solutions and support in managing subsidies.

4.2.3 THE PUBLIC ADMINISTRATION REPRESENTATIVE

This persona addresses public administration bodies in Mallorca responsible for regional energy efficiency and tourism competitiveness. Carlos, a 40-60-year-old Technical Director or Project Manager, holds a degree in Engineering or Public Administration. He manages European funds and regional subsidies aimed at the hospitality sector's energy transition.

Unlike private owners, Carlos's decisions are policy-driven rather than profit-driven. His focus is on transparency, legal compliance, and measurable environmental impact. The procurement process he oversees follows strict tender procedures, which often leads to slow administrative timelines. His main concerns are political scrutiny, the risk of non-compliance, and budget limitations. He seeks reliable engineering partners who provide exhaustive documentation, transparent cost structures, and solutions that align with regional sustainability branding.

5 COMPETITIVE LANDSCAPE

5.1 *INDUSTRY STRUCTURE AND COMPETITIVE DYNAMICS*

Rivalry among existing competitors is high within a fragmented market. While large groups like Sampol and Estel focus on large-scale projects, small local firms and construction companies cover the lower end. No clear dominant player exists for mid-scale projects (€100k–€500k), creating direct competition in this niche. Although the energy transition and infrastructure needs drive demand and mitigate price pressure, significant rivalry remains.

The threat of new entrants is low due to high barriers to entry. Access to projects depends on relational barriers like trust, referrals, and prior relationships with hotel managers, as the market is reputation-based and dominated by repeat business. Operational barriers exist because mainland engineering firms require a local presence, and execution risk is high since first projects often require low pricing or free work to build industry credibility.

The bargaining power of suppliers is high, driven by key providers of skilled labor (HVAC, plumbing, and electrical), subcontractors, and equipment manufacturers. A significant labor shortage in Spain and Mallorca, combined with a limited supplier base, grants these players substantial leverage. Consequently, this strong bargaining power directly impacts project margins and delivery timelines.

The bargaining power of clients is low and remains structurally low. Demand is highly fragmented, consisting of hundreds of hotels, agrotourisms, and public entities that lack in-house engineering expertise and rely heavily on external providers. Switching costs are high due to trust requirements, project complexity, and the coordination burden. While some price sensitivity exists among smaller hotels with limited budgets, clients generally maintain low bargaining power once trust is established.

The threat of substitutes is low. Key substitutes include in-house technical teams with limited capacity, large mainland engineering firms less adapted to local constraints, and installers or contractors who lack engineering depth. None of these alternatives provide the integrated value of engineering, permitting, coordination, and local expertise, which remains the core competitive advantage.

The industry presents high attractiveness driven by several positive factors. Structural demand is strong, fueled by the energy transition, tourism upgrades, and an infrastructure investment scope of approximately €90–100M. Additionally, there is a clear supply gap in specialized engineering services. However, the sector faces constraints such as high supplier power due to labor shortages and significant entry barriers rooted in relationship-based dynamics.

5.2 COMPETITOR BENCHMARKING

The competitive environment in Mallorca for hotel engineering and energy services is diverse, ranging from international infrastructure groups to small local consultancies. To evaluate the market positioning relative to the identified customer personas, competitors have been analyzed based on their project scale, price levels, and suitability for small-to-medium enterprises (SMEs) and agritourism.

5.2.1 TIER 1: LARGE-SCALE ENGINEERING AND INFRASTRUCTURE GROUPS

This segment includes dominant players such as Estel and Sampol, which focus on large-scale international projects and multi-hotel portfolios.

- **Estel**: An installations integrator focused on high-tech building systems and automation. While they offer high-tech installations and turnkey execution, their focus on complex, large-scale urban and international resort projects make them less accessible for the small hotel segment. Their price level is categorized as high, reflecting their large team structure and brand positioning. [21]

- **Sampol**: This group operates on an international scale, offering a comprehensive "circular economy" model that includes water systems and waste reduction alongside energy. Like Estel, their suitability for agritourism is limited due to a focus on large hotels and portfolios, which often fall outside the budget and scale requirements of smaller properties. [22]

5.2.2 TIER 2: SPECIALIZED LOCAL ENGINEERING AND ENERGY CONSULTANTS

This segment represents the most direct competition for the target personas, as these firms offer tailored services for small and medium-sized properties.

- **Media-tec**: A local firm specialized in energy monitoring and analytics. They provide detailed savings strategies specifically for hotel operations and are likely to accept smaller properties where measurable energy savings are a priority. [23]
- **SM Ingeniería Mallorca**: Positioned as a "one-stop" engineering partner, they handle electrical, HVAC, and renewable projects while simplifying the technical design and permitting process. Their flexibility makes them a good fit for both small hotels and rural tourism buildings. [24]
- **Sigma Ingeniería**: A lean, local office focusing on HVAC optimization and energy efficiency. With a medium-low price level and expertise in small-to-medium buildings, they are highly suited for the specific energy upgrade needs of agritourism properties. [25]

5.2.3 TIER 3: CONSTRUCTION-LED REFURBISHMENT FIRMS

These competitors approach the market from a general contractor perspective, where energy efficiency is often a secondary component of a broader structural renovation.

- **Construplac Mallorca & Serman Construct**: Both firms specialize in hotel refurbishments, often timing their work with seasonal shutdowns. While they manage full project scopes and permits, energy efficiency is secondary to their core construction and structural services. [26]

- **Reformas Carmen**: A local contractor offering turnkey refurbishments, including the renewal of installations. They are highly competitive on price (medium-low) and are suitable for small hotels or pensions needing partial renovations rather than a pure energy-focused engineering project. [27]

5.2.4 COMPETITIVE POSITIONING SUMMARY

The Table 1 summarizes the benchmarking of these competitors against the key requirements of the identified customer personas.

Table 1. Competitor benchmarking

Competitor Category	Primary Value Proposition	Price Level	Fit for Small/Rural Hotels
Large-Scale Groups (Estel, Sampol)	Turnkey, high-tech, international scale	High	Limited
Specialized Local Engineering (Media-tec, Sigma, Ing. Mallorca)	Energy savings, monitoring, and local permitting expertise	Medium to Medium-Low	High
Construction Integrators (Construplac, Carmen, Serman)	Integral refurbishments and structural work	Medium to Medium-Low	Moderate to Good

5.3 SWOT ANALYSIS

5.3.1 STRENGTHS: STRATEGIC COMPETITIVE ADVANTAGE

The venture possesses a highly specialized market position by targeting an underserved niche: small to medium-sized hotels and agrotourism with project values typically ranging from €100,000 to €500,000. Its primary competitive advantage lies in its integrated service model, which streamlines design, permitting, EPC coordination, and commissioning through a single point of contact. This operational efficiency is complemented by profound local expertise regarding Balearic regulations and a lean cost structure that facilitates competitive pricing against larger, more bureaucratic engineering firms. Furthermore, the firm's ROI-driven approach—prioritizing energy and water savings—aligns perfectly with both the financial interests of hotel owners and modern sustainability mandates, allowing for phased execution that minimizes operational disruption.

Some evidence shows that local firms, such as Ingeniería Mallorca, benefit from faster permitting processes due to their familiarity with these requirements. This is particularly relevant in a context where the Balearic Government is investing €470 million in 110 sustainable tourism projects, further emphasizing the importance of local expertise. [28]

Another relevant piece of evidence is Estel, which began as a telecommunications installation company and later expanded to manage full hotel installations. However, as the company has grown, now generating approximately €150 million in annual revenue[29], it has shifted its focus away from smaller residential and hotel projects, which are no longer aligned with its business model. Evidence of this can be seen in one of the interviewed hotels, where Estel carried out the most recent engineering project primarily due to a long-standing relationship and the trust built over the years; however, the company shows an increasing reluctance to undertake this type of work and, in the case of very small projects, typically opts not to pursue them.

5.3.2 WEAKNESSES: INTERNAL CONSTRAINTS AND RISKS

There are significant challenges related to limited brand recognition and the absence of a consolidated track record in the local market. Its lean, "solo-structure" model, while cost-efficient, inherently restricts total operational capacity and creates a high level of dependence on external subcontractors for project execution. This structural configuration results in potentially volatile, project-based revenue streams rather than steady recurring income. Additionally, the firm's current scale prevents it from competing for large-scale or complex infrastructure projects, necessitating a heavy initial investment in relationship-building to establish the trust required for future referrals and business continuity.

An initial investment is required, particularly in brand development and specialized software. Evidence of this can be observed in initiatives such as ParcBit, which promotes technological hubs but also highlights the need for upfront capital to access and operate within these ecosystems. [30]

5.3.3 OPPORTUNITIES: MARKET GROWTH AND SCALABILITY

The current economic and regulatory landscape in the Balearic Islands presents substantial avenues for growth. The availability of public subsidies and funding programs (such as those from CAIB) for energy efficiency and circular tourism provides a strong incentive for clients to invest in infrastructure upgrades [31]. Moreover, the accelerating energy transition and the critical need for water management, exemplified by public desalination and electrification initiatives, create a robust demand for specialized engineering. By filling the market gap between high-cost global firms and non-specialized local players, the venture is well-positioned to scale its operations across Balearic Islands, capitalizing on the continuous modernization needs, infrastructure upgrades and efficiency improvements of the Mediterranean tourism sector.

The Chamber of Commerce provides support to start-ups, while the Balearic engineering sector positions itself as a key driver of future development, as highlighted in a recent gala focused on innovation and talent. [32]

5.3.4 THREATS: EXTERNAL BARRIERS AND MARKET VOLATILITY

The landscape is dominated by established engineering and construction firms with deep-rooted reputations and existing relationships. This competition is intensified by significant administrative hurdles, as the high level of regulatory complexity regarding permits and subsidies can cause substantial project delays. There is also a notable risk regarding public tenders, which frequently fail due to unrealistic budgeting, and a potential reluctance from smaller clients to commit capital amidst uncertainty regarding long-term ROI in a trust-based market [14]. Furthermore, the island logistics may lead to delays in materials and coordination and there is a limited availability of technically skilled construction labor (such as plumbers, HVAC technicians, electricians, and installation workers) which is difficult to source and therefore holds significant bargaining power. [33]

6 VALUE PROPOSITION Y BUSINESS MODEL

6.1 *VALUE PROPOSITION CANVAS*

6.1.1 THE CUSTOMER PROFILE: JOBS, PAINS, AND GAINS

The "Jobs to be Done" for hotel owners and managers in Mallorca primarily revolve around technical modernization and operational efficiency. Key tasks include upgrading HVAC, boiler, and solar systems, reducing energy dependency, and ensuring compliance with increasingly stringent environmental regulations. Additionally, these stakeholders must navigate complex public subsidy applications and coordinate multiple suppliers, often while the hotel remains operational or during a limited low-season window.

The market faces significant "Pains," notably a lack of in-house technical expertise and a profound fear of cost overruns and bureaucratic delays. Coordination issues between contractors and the logistical limitations of the island, such as material delivery delays, and further complicate projects. Furthermore, there is a documented distrust of large mainland engineering firms, which are often perceived as disconnected from local realities.

Conversely, the expected "Gains" include the reduction of operational costs, the security of guaranteed regulatory compliance, and the ability to access public funding with ease. Customers prioritize working with a trusted local partner who can provide transparent calculations and predictable project timelines without disrupting the guest experience.

6.1.2 THE VALUE MAP: PRODUCTS, PAIN RELIEVERS, AND GAIN CREATORS

The proposed "Products and Services" comprise a comprehensive suite of engineering solutions, including feasibility audits, water reuse systems, and turnkey EPC (Engineering, Procurement, and Construction) coordination. The firm provides specialized technical support for subsidy applications and ongoing advisory services to ensure long-term efficiency.

To act as effective "Pain Relievers," the firm establishes itself as a single technical interlocutor for the entire project lifecycle, simplifying the experience for the owner. By offering deep local knowledge of Balearic permits and transparent, milestone-based budgets, the service mitigates the risk of bureaucratic burdens and financial surprises. Furthermore, engineering designs are specifically adapted to the structural constraints of Mallorca's older buildings.

The “Gain Creators" focus on maximizing value through ESG-aligned engineering and integrated subsidy management. By utilizing phased execution strategies, the firm guarantees that hotel operations remain undisturbed during technical upgrades. Finally, scalable solutions and clear ROI simulations ensure that investments are aligned with the specific financial capacity of each property, fostering a long-term technical partnership model.

6.2 BUSINESS MODEL CANVAS

6.2.1 VALUE PROPOSITION

Providing specialized engineering and turnkey EPC for small and medium hotels in Mallorca, we focus on €100k–€500k projects underserved by large firms. This includes a single technical point of contact from design to execution and clear ROI-driven energy and water efficiency solutions. Leveraging strong local expertise in permits and island regulations, we utilize phased execution to minimize hotel operational disruption. As a lean, cost-efficient alternative to large mainland firms, we deliver sustainability-aligned engineering ensuring ESG and regulatory compliance.

6.2.2 CUSTOMER SEGMENTS

Target customer segments include small and medium hotels (30–200 rooms) without in-house engineering, agrotourism and rural boutique accommodations (8–25 rooms), and public administration bodies focused on water and energy infrastructure. Specific pain points for agrotourism include limited budgets, a lack of technical staff, and growing sustainability regulation pressure in the Balearic Islands. The customer base also extends to public administration bodies regarding water and energy infrastructure.

6.2.3 CHANNELS

Primary channels include direct sales meetings with hotel owners and managers, referrals through hotel associations such as FEHM (Mallorca Hotel Business Federation), and the leveraging of professional networks and industry contacts. Operations also involve participation in public tenders and fostering word-of-mouth within hotel groups. Digital engagement is maintained through LinkedIn, focusing on technical content regarding savings cases, Balearic regulations, and ROI, alongside a technical blog or newsletter for expert positioning. Additionally, webinars and workshops conducted with hotel associations serve as a key acquisition channel.

6.2.4 RELATIONSHIPS WITH CUSTOMERS

The customer relationship model is defined by personalized, project-based advisory and transparent communications within a long-term technical partnership framework. This high-trust, relationship-driven collaboration ensures continuous technical support remains available even after project completion. To further strengthen this bond, the model incorporates post-project satisfaction surveys and ROI follow-up reports at 6 and 12 months. These initiatives serve a dual purpose: they facilitate service improvement while generating concrete testimonials backed by real-world data—such as a 34% energy savings case—which provide highly effective sales evidence.

6.2.5 REVENUES

Revenue streams are generated through engineering design fees, turnkey EPC project margins, project management and supervision fees, and energy audit and feasibility study fees. The model also includes technical support for public tenders. To address the current dependency on new projects, an annual maintenance and recurring technical support subscription is incorporated—comprising facility reviews, regulatory advice, and ROI follow-up reports—to transform one-off clients into predictable revenue and reinforce long-term ties.

6.2.6 KEY RESOURCES

Key resources comprise the founder’s expertise in mechanical and energy systems, professional certifications and licenses, and specialized engineering software alongside the company's established reputation. Deep knowledge of local regulations is complemented by a continuous training plan focusing on regulatory updates and new technologies. Operational capacity is further sustained by a subcontractor network managed via formal onboarding and evaluation protocols.

6.2.7 KEY ACTIVITIES

Key activities encompass technical feasibility studies and both basic and detailed engineering design. The firm conducts energy audits and ROI calculations while managing project coordination among contractors and suppliers. Additional core operations include tender preparation and documentation, EPC supervision, and equipment commissioning. Furthermore, the company facilitates client workshops on energy efficiency for educational and marketing purposes, alongside an ongoing upskilling program and a formal protocol for subcontractor network expansion.

6.2.8 KEY PARTNERS

Key partners include local HVAC and electrical installers, construction and refurbishment companies, and equipment manufacturers, alongside legal and regulatory consultants. The network further extends to public administration bodies, hotel associations such as FEHM, and financial institutions. Strategic partnerships are reinforced by preferential agreements with sustainability-focused manufacturers and an exclusive long-term deal with at least one reference installer in Mallorca.

6.2.9 COST STRUCTURE

The cost structure is divided into fixed and variable components, meticulously organized to support the firm's core activities and strategic growth.

The fixed cost category includes professional liability, accident, and health insurance, alongside self-employment taxes, professional association fees such as those for the Colegio de Ingenieros ICAI, and general certification costs. A significant portion of these expenses is dedicated to a robust software suite, including specialized engineering tools like AutoCAD, Revit, and Cype, complemented by essential productivity and artificial intelligence platforms. Additionally, this segment covers administrative management, coworking space rental (if needed), and a consistent marketing and digital presence strategy, which is explicitly linked to the firm's channel and acquisition efforts.

The variable costs are directly tied to project execution and fluctuate as a percentage of total revenue. This primarily involves the engagement of subcontractors for design support and specialist expertise, a cost which is fundamentally linked to EPC and supervision activities. Other project-specific expenses include travel and site visits for on-site oversight, external consultancy fees, and the procurement of specific engineering resources required for individual project needs. Furthermore, the firm maintains a dedicated budget line for continuous professional training and the ongoing development of the subcontractor network, ensuring operational scalability and adherence to the latest regulatory and technological standards.

6.3 MISSION, VISION, AND VALUES

6.3.1 MISSION

To simplify and deliver high-quality engineering solutions for Mallorca’s hospitality and infrastructure sector.

6.3.2 VISION

To position the company as a benchmark for specialized, mid-scale engineering projects in island economies.

6.3.3 VALUES

- Technical Excellence: We prioritize rigorous engineering standards and measurable results.
- Integrity & Transparency: Clear budgets, realistic timelines, honest communication.
- Local Commitment: Deep understanding of island-specific regulations, logistics and constraints.
- Client-Centric Approach: Every solution is tailored to the client's operational and financial reality.
- Sustainability: We combine environmental responsibility with economic viability.
- Reliability: We deliver what we promise — on time and within scope.

7 MINIMUM VIABLE PRODUCT (MVP)

7.1 FIRST PHASE: MVP

Our service begins with an on-site technical diagnostic of energy, HVAC, and water systems to identify key operational constraints such as hotel seasonality and building age. Utilizing a value engineering approach, we optimize technical solutions to balance performance and feasibility through basic engineering designs, preliminary layouts, and a project roadmap spanning from design to commissioning. This scope includes a coordination plan for contractors and authorities, a preliminary permitting assessment, and a basic technical validation of existing system bottlenecks. Furthermore, we provide a comparison of one to two practical technical alternatives and a phased execution strategy to minimize operational disruption, ultimately preparing the project for EPC execution and positioning our firm as the future EPC manager.

We provide a single technical interlocutor across the entire project lifecycle while utilizing local engineering expertise to manage permits, suppliers, and island-specific constraints. Our firm focuses on the underserved mid-size project segment of €100k to €500k, offering a lean, fast-response alternative to large engineering firms. Furthermore, we act as a bridge between engineering design and real execution by maintaining a consistent EPC mindset throughout the process.

The service reduces the client's need to coordinate multiple contractors and simplifies complex permitting and administrative processes. It eliminates uncertainty regarding project initiation while providing clarity in decision-making concerning project scope, methodology, and partnerships. Furthermore, the approach reduces perceived project risk and complexity by acting as a translator between technical and business perspectives.

Our customer experience is defined by a streamlined delivery process starting with a single 30-to-60-minute initial meeting and direct communication with the primary decision-maker, such as the owner or manager. This approach ensures a fast turnaround of one week or less for a concise, visual deliverable of five to ten pages. By focusing on clarity and practical results, the service avoids heavy documentation and unnecessary overengineering.

In conclusion, this MVP operates as a lightweight, high-value pre-engineering service centered on clarity, coordination, and feasibility. By prioritizing these core elements, the service strategically positions the firm as the future EPC and project manager.

7.1.1 MVP VALIDATION

The demand validation phase focuses on assessing the need for a local turnkey engineering partner for small and medium-sized hotels in Mallorca. The hypothesis suggests that these establishments lack internal technical expertise, value a single technical interlocutor for engineering and permits, and perceive projects as complex and risky. To validate this, the process involves conducting 10 to 15 structured interviews, offering free diagnostic sessions, and presenting high-level project roadmaps. Success is measured by meeting acceptance rates, conversation engagement, and follow-up requests. The criteria for validation include a minimum 60% engagement rate, at least 30% of participants requesting concrete proposals, and the identification of coordination and complexity as the primary pain points.

Table 2 shows the summary of the metrics to validate the Minimal Viable Product.

Table 2. Metrics to validate MVP

Metrics to Measure	Success Criteria
% Agreeing to meeting	≥ 60% show clear interest and engagement
% Engaged conversations	≥ 30% request follow-up or concrete proposal
% Requesting follow-up	At least 2-3 hotels express willingness to start a project.
Qualitative pain clusters	Dominant pain is coordination/complexity, not just price.

7.2 SECOND PHASE AND LONG-TERM GROWTH VISION

The second phase, involving the creation of the website and brand, will be initiated once several projects have been completed to serve as a record of experience. The initial projects will be secured through personal contacts, direct calls to hotels, and attendance at trade fairs to ensure visibility. To build trust, these first engagements will be offered at a very low cost or for free, with clients paying what they consider appropriate.

This phase will also serve as a validation stage, where key hypotheses about customer needs, decision drivers, and service positioning will be tested. Through continuous interaction with clients, the business will apply design thinking methodologies, iterating on the service offering to progressively refining solutions and adapt to real market needs and constraints.

Once the website has been developed, it will serve as a tool to track clicks and interactions, facilitating a more accurate and realistic assessment of market requirements.

The long-term vision focuses on positioning the firm as the reference engineering partner for mid-scale hotel projects within island economies. The objective is to establish a strong, reputation-based business driven by referrals and the cultivation of long-term relationships.

The business will evolve from advisory and pre-EPC services toward full EPC project execution and delivery, complemented by the development of standardized solutions for recurring hotel requirements such as HVAC, water, and energy upgrades. Additionally, the service model will expand to include long-term technical partnership contracts, moving beyond exclusively project-based engagements.

Operational scaling focuses on building a network of trusted local subcontractors and specialists while gradually internalizing key capabilities, including project management and engineering design. This progression facilitates the transition from a solo structure to a lean and scalable engineering firm.

As an optional future innovation, the service will integrate digital tools for project monitoring and coordination and incorporate sustainability and ESG-driven engineering solutions. Additionally, the firm will explore water management and desalination as a specialized niche within its technical offerings.

8 MARKETING STRATEGY

8.1 MARKETING PLAN

The current market landscape presents several key issues that shape the strategic approach. Opportunities exist within public subsidies and funding programs, such as IDAE, alongside a notable market gap situated between large engineering firms and small local installers. However, the business faces challenges including limited brand recognition, a lack of a track record, and a dependence on subcontractors for project execution. Furthermore, operations are highly dependent on trust and referrals within a relationship-driven market, which is currently experiencing a shortage of skilled technical labor.

To address these factors, specific SMART objectives have been established. The primary goal is to acquire 3-5 pilot clients, specifically hotels or agrotourism, within the first 12 months. Within the first 12 to 18 months, the aim is to build at least 5 reference projects or case studies. Short-term targets include generating over 20 qualified leads through direct outreach and partnerships within the first 6 months, as well as establishing 2-3 strategic partnerships with hotel associations, contractors, or engineering firms within a year. By the second year, the objective is to have more than 50% of new clients sourced via referrals.

Tactical execution involves direct meetings with hotel owners, managers, and maintenance teams, offering free diagnostic or feasibility sessions. To demonstrate value, a high-level project roadmap covering permits, suppliers, and execution will be presented. Participation in public tenders and subsidy-related projects is a priority, alongside collaboration with local HVAC and electrical installers and mainland engineering firms needing local support. To further build credibility, case studies will be developed from initial pilot projects while leveraging word-of-mouth within hotel groups and associations like FEHM. Finally, clients will be targeted during subsidy application periods or seasonal renovations, with the business providing direct support in subsidy application and project structuring.

Table 3 shows the key SMART objectives.

Table 3. Marketing Plan: Key SMART objectives

Objective	Target Metric	Timeline
Pilot Client Acquisition	3–5 Pilot Clients (Hotels/Agrotourisms)	12 Months
Lead Generation	20+ Qualified Leads (Outreach/Partnerships)	6 Months
Reference Building	5 Minimum Case Studies/Reference Projects	12–18 Months
Strategic Alliances	2–3 Partnerships (Associations/Contractors)	12 Months
Referral Rate	>50% of New Clients via Word-of-Mouth	By Year 2

8.2 BRAND SCRIPT

Hotel owners face the difficult task of balancing profitability, operations, and compliance without the support of internal technical teams. They often struggle with a lack of in-house engineering expertise, making it difficult to compare contractor proposals or coordinate complex engineering issues. Internally, there is a persistent fear of cost overruns and project delays, alongside uncertainty regarding ROI and investment decisions.

We understand that engineering projects are often perceived as complex, risky, and time-consuming. To navigate these hurdles, we provide specialized expertise in mechanical, electrical, and energy systems, backed by strong local knowledge in Mallorca and experience in turnkey EPC coordination. Our structured approach includes:

- Step 1: Initial technical assessment and feasibility study.
- Step 2: Clear engineering proposal detailing ROI, scope, and timeline.
- Step 3: Turnkey EPC project execution.

“To begin this transition, you are invited to schedule a first diagnostic consultation or request a project feasibility assessment.”

By taking action, owners can execute projects with predictable costs and timelines, reduce operational expenses, and improve property value. Failing to address these technical needs results in continued high energy and water costs, obsolete infrastructure, and operational disruptions that negatively impact guest experience and revenue.

8.3 ROADMAP

The following roadmap outlines a phased strategic approach to establishing a dominant market presence in the hotel engineering sector. By prioritizing technical validation and localized network building, this plan ensures the transition from initial outreach to a recognized brand authority.

Phase 0: Discovery and hypothesis validation

1. Target Identification: Identify Mallorca hotel owners and decision-makers requiring technical support without internal teams.
2. Stakeholder Interviews: Validate concerns regarding the lack of in-house expertise and fears of project cost overruns or delays.
3. Hypothesis Testing: Confirm if the perception of engineering as complex, risky, and time-consuming acts as the primary investment barrier.
4. Service Market Fit: Refine specialized mechanical, electrical, and energy engineering offers to meet specific operational and efficiency needs.

Phase 1: Business Development & High-Volume Proposals

1. Outreach Campaign: Initiate contact with the pool of interviewed leads to offer initial technical assessments.
2. Diagnostic Phase: Perform site visits and initial technical diagnostics to build rapport.
3. Proposal Engineering: Draft and present multiple project feasibility assessments including ROI and scope.

4. Negotiation & Closing: Address concerns regarding investment decisions and operational disruptions to secure the first 1–2 low or free cost pilot projects.

Phase 2: Pilot Project Execution

1. EPC Coordination: Manage the turnkey execution of the first projects to demonstrate reliability.
2. Operational Integration: Ensure all upgrades are executed without disrupting normal hotel operations.
3. Technical Validation: Document the reduction in energy and water costs following the upgrades.

Phase 3: Networking

1. Local Partner Onboarding: Formalize relationships with Mallorca-based suppliers and contractors.
2. Industry Networking: Attend trade fairs to establish authority and gather market intelligence.
3. Process Standardization: Use lessons from pilot projects to standardize permitting and administrative workflows.

Phase 4: Brand Consolidation & Public Bidding

1. Portfolio & Web Launch: Create a professional platform showcasing the 5 completed projects and ROI data.
2. Public Sector Qualification: Prepare administrative documentation to enter public tender processes.
3. Expansion of Services: Market your position as a trusted, long-term technical partner for ESG and sustainability positioning.

Table 4 shows Gantt diagram with all the activities included.

Table 4. Gantt diagram

Included Description	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24
Identifying key hotel owners and decision-makers in Mallorca.																								
Validating pain points like lack of expertise and fear of cost overruns.																								
Confirming if focusing on ROI and sustainability solves client fears.																								
Contacting validated leads to offer initial technical assessments.																								
Performing initial diagnostics to build trust and demonstrate expertise.																								
Drafting proposals with defined scope, timeline, and ROI.																								
Securing the first 1-2 projects at a nominal cost to build references.																								
Executing upgrades in mechanical, electrical, and energy systems.																								
Managing projects without disrupting normal hotel operations.																								
Measuring the reduction in energy and water costs after execution.																								
Formalizing relationships with local Mallorca suppliers and contractors.																								
Attending industry events to establish authority and professional contacts.																								
Creating a website showcasing 5 projects and technical success stories.																								
Completing administrative requirements to bid for public projects.																								
Developing technical documentation for government and municipal tenders.																								
Positioning the brand for ongoing ESG and property value consulting.																								

9 FINANCIAL PLAN

9.1 COST STRUCTURE

The business operates under two cost categories: initial capital expenditure (CAPEX) and recurring operational costs (OPEX).

The initial capital expenditure (CAPEX, Table 5) for the project is established at €11,300, all of which is incurred during the first month of operations to facilitate the essential infrastructure. This investment comprises €2,700 for hardware procurement, €6,300 for permanent software licenses including CYPE, €800 for legal registration as a sole trader ("autónoma"), and €1,000 dedicated to branding and corporate identity. Under the current financial projections, no additional capital investment is anticipated through the conclusion of Year 5.

Table 5. CAPEX (Financial Plan)

CAPEX	
Laptop	2,500 €
External monitor	200 €
Self-employed registration + legal advisory	800 €
Branding (logo, website, business cards)	1,000 €
Perpetual software licenses (CYPE)	6,300 €
Miscellaneous / contingencies	500 €
TOTAL CAPEX	**11,300 €**

Fixed Operating Costs (OPEX, Table 6) amount to approximately €17,982 in Year 1 and €19,482 in Year 2, stabilizing thereafter. Key fixed items include: "cuota de autónomos" (€3,000/yr Y1; €4,800/yr Y2), professional liability and health insurance (~€1,800/yr), software subscriptions — AutoCAD, Revit, Claude AI, Office 365 — (~€7,382/yr), fiscal advisory (€1,200/yr), and marketing/web maintenance (~€2,700/yr Y1).

Table 6. Fixed operating Expenses (Financial Plan)

FIXED OPERATING EXPENSES (OPEX)			
Freelance / Insurance / Professional Associations			**Month 1**
OPEX Fixed	Self-employed social security fee	200-600€/month	250 €
OPEX Fixed	Professional civil liability insurance	804€/year (monthly)	67 €
OPEX Fixed	Accident & health insurance	996€/year (monthly)	83 €
OPEX Fixed	Engineers Association (ICAI)	100€/year (yearly)	100 €
Software (Annual Licenses)			
Software	Microsoft Office 365	230€/year (yearly)	230 €
Software	Claude / AI	1080€/year (monthly)	90 €
Software	AutoCAD	2208€/year (monthly)	184 €
Software	Revit	3864€/year (monthly)	322 €
Administration & Marketing			
Admin	Accounting / tax advisory	1200€/year	100 €
Admin	Web / branding / marketing	setup + web	500 €
Admin	Other administrative expenses	office supplies	150 €
TOTAL FIXED COSTS (OPEX)			**2,076 €**

Variable Costs (Table 7) are driven primarily by subcontracting (15–22% of revenue in early years, rising to 20–25% as project volume grows), travel and site visits (€100–€800/month depending on activity), and miscellaneous materials (€50–€200/month). Total variable costs represent approximately 25% of revenue in steady state.

Table 7. Variable Costs (Financial Plan)

Variable Costs	Month 1	Month 24	Monthly Cost
Subcontracting	15-22%	20-25%	% of revenue
Travel & Site Visits	100 €	800	€ / month
Other Costs	50 €	200	Materials, etc.

9.2 REVENUE PROJECTIONS

Revenue (Table 8) is generated through two primary streams: Engineering Fees and EPC Margins. The Engineering Fees are calculated as a percentage fee, ranging from 7.0% to 9.0%, applied to the total value of engineering projects involving mechanical, energy, and hydraulic systems; these projects carry an average value that scales from €200,000 in Year 1 to €350,000 by Year 5. Additionally, the company captures an EPC Margin, yielding a gross margin of 10% to 15% on Engineering, Procurement, and Construction contracts, with average contract values situated between €100,000 and €600,000.

Table 8. Revenue Projection of Financial Plan

Type of project	Project Value	Fee/Margin	Revenue	Month
Project	200,000.00 €	7%	14,000.00 €	M6
Project	200,000.00 €	7%	14,000.00 €	M12
EPC	100,000.00 €	10%	10,000.00 €	M12
Project	225,000.00 €	7%	15,750.00 €	M13
Project	225,000.00 €	7%	15,750.00 €	M13
EPC	350,000.00 €	10%	35,000.00 €	M16
Project	225,000.00 €	7.5%	16,875.00 €	M16
EPC	400,000.00 €	12%	48,000.00 €	M20
Project	250,000.00 €	8%	20,000.00 €	M20
EPC	400,000.00 €	12%	48,000.00 €	M24
Project	250,000.00 €	8%	20,000.00 €	M24
EPC	400,000.00 €	12%	48,000.00 €	M24
Project	250,000.00 €	8%	20,000.00 €	M24

Payment is structured in three milestones: 30% upfront, 40% mid-project, 30% on completion.

Year 1 revenue is intentionally limited (2 engineering projects, 1 EPC) given the ramp-up phase. From Year 2 onward, project cadence increases materially, with 6 engineering and 4 EPC projects in Year 2.

9.3 BREAK-EVEN ANALYSIS

The monthly break-even threshold — the minimum revenue required to cover all fixed and variable costs — is approximately €1,700/month in standard operating months (rising to ~€2,350 in months with higher fixed charges such as software renewals).

At a monthly level, the cumulative cash flow turns positive in month 14 of operations. It is shown in Figure 1.

Initial cash buffer required to sustain operations through the ramp-up period is estimated at €23,500, covering CAPEX plus six months of fixed costs before the first material revenue is collected.

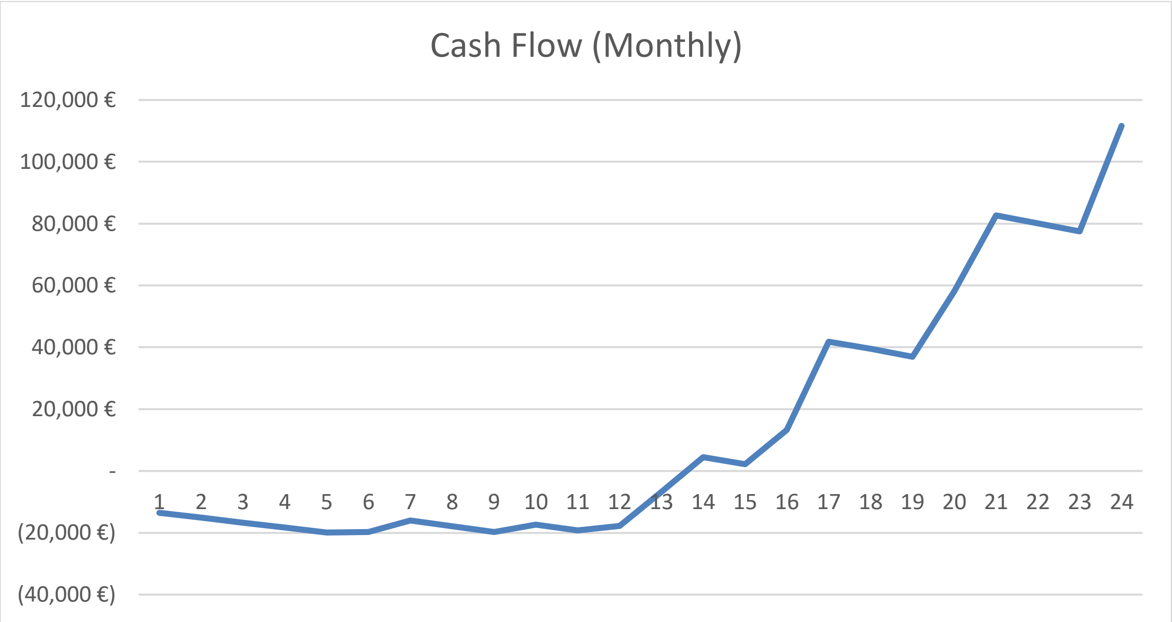

Figure 1. Brake-even of Financial Plan

Comprehensive financial projections, encompassing the detailed monthly financial plan for Months 1 through 24 and the consolidated annual performance metrics for Years 1 through 5, are provided for further review in Appendix III.

9.4 SCENARIO ANALYSIS

Three scenarios are modelled across the five-year horizon, varying project volume and average contract value and are shown in Table 9.

Table 9. Scenario analysis

Metric	Conservative (Base)	Moderate	Aggressive
Y1 Revenue	€ 38,000	€ 55,000	€ 75,000
Y2 Revenue	€ 289,625	€ 380,000	€ 500,000
Y3 Revenue	€ 306,000	€ 450,000	€ 650,000
Y5 Revenue	€ 652,500	€ 900,000	€ 1,200,000
Break-even reached	Month 14	Month 10	Month 8

The conservative scenario (base case from the model) assumes slow client acquisition, low initial fees (7%), and limited EPC activity in Year 1. The moderate scenario assumes one additional engineering project per semester and a 0.5pp fee uplift from Year 2. The aggressive scenario assumes faster referral-driven growth, higher EPC volumes, and fee rates reaching 9%+ by Year 3.

All scenarios achieve profitability by Year 2. The primary risk factor is the concentration of revenue in a small number of large projects, which creates cash flow volatility between milestone payments — mitigated by the structured 30/40/30 payment schedule.

10 RISKS ANALYSIS AND MITIGATION

10.1 RISK ANALYSIS

The most critical risks, characterized by the highest probability and impact, are: dependency on a limited client base and high revenue concentration in few projects; lack of initial reputation; labor shortages; cash flow volatility due to project-based revenue; and key person risk as a sole practitioner, which threatens revenue continuity in the event of personal incapacity. Table 10 shows the critical risks.

Table 10. Critical Risks

#	Risk	Description	Probability	Impact
R1	**Revenue Concentration / Client Dependency**	Year 1 relies on only 2 engineering projects and 1 EPC. Loss of a single client could eliminate more than 50% of annual revenue.	High	High
R2	**Lack of Track Record & Reputation**	The market is 100% trust and referral driven. Without a portfolio, securing the first client is the primary barrier to entry.	High	High
R3	**Shortage of Qualified Subcontractors**	Documented scarcity of HVAC, plumbing and electrical technicians in the Balearics. High supplier bargaining power directly compresses margins and extends timelines.	High	High
R4	**Cash Flow Volatility (Milestone Payments)**	With a 30/40/30 payment structure, any project delay directly delays cash collection. Break-even is at month 14; a 2–3 month delay in the first project is existential.	High	High
R5	**Single-Person Business Continuity**	Illness, injury or personal unavailability of the founder completely halts all operations. No redundancy exists in the current solo structure.	High	High

Other risks include project delays due to administrative procedures, competitive pricing pressure from firms seeking to maintain market share, client reliance on subsidies, and material supply delays. Furthermore, scalability is limited without recruitment, as year three and five projections are unfeasible for a single individual, necessitating hiring and its associated costs. Finally, regulatory changes or technical execution errors may lead to civil liability and reputational damage. All of this is shown in Table 11.

Table 11. High level risks

#	Risk	Description	Probability	Impact
R6	**Public Tender Delays & Administrative Complexity**	88 public contracts went unawarded in the Balearics in 2024. Administrative processes are slow, with unrealistic budgets and deadlines frequently cited.	High	Medium
R7	**Competition from Large Continental Engineering Firms**	Established firms (Sampol, Estel) could respond to niche competition by lowering prices or reinforcing local presence in the €100k–€500k segment.	Medium	High
R8	**Subsidy Dependency for Demand Activation**	Many clients (especially agrotourism) only invest when co-financing is available. Exhaustion or delay of IDAE / CAIB funds would suppress demand materially.	High	Medium
R9	**Insular Logistics: Material Delivery Delays**	All equipment and materials must be shipped to the island. Lead times are structurally longer than mainland Spain and can halt project execution mid-phase.	High	Medium
R10	**Inability to Scale Without Hiring**	Financial projections assume 9–15 engineering projects/year by Year 3–5, which is physically unachievable as a solo operator without additional headcount.	Medium	High
R11	**Regulatory / Policy Change in Energy Transition**	Rapidly evolving regulations on self-consumption, energy communities and water management could invalidate proposed solutions or alter client incentives.	Medium	High
R12	**Technical Error or Execution Failure**	An engineering error (design fault, calculation mistake) or subcontractor failure could cause material damage, liability claims and irreversible reputational loss in a small market.	Low	High

Finally, other risks with medium and low risk levels are presented in Table 12 and Table 13, respectively.

Table 12. Medium Risk Level

#	Risk	Description	Probability	Impact
R13	**Hotel Sector Seasonality Constraints**	Seasonal hotels have a ~4-month winter window for engineering works. Missing this window due to any reason delays the project by a full year.	High	Medium

R14	**EPC Margin Compression**	Projected EPC gross margins of 10–15% assume current subcontractor rates. Labor scarcity may push real margins to 5–7%, significantly impacting profitability.	Medium	Medium
R15	**Client ROI Resistance / Long Payback Periods**	Small hotels and agrotourism are highly sensitive to payback periods. Without a compelling sub-5-year ROI, many potential clients will not commit to investment.	Medium	Medium
R16	**Unfair Competition from Unlicensed Installers**	Installers without engineering qualifications may offer lower prices for services that legally require a signed engineer. Enforcement is inconsistent.	Medium	Medium
R17	**Failure to Secure Subcontracting from Mainland Firms**	The model assumes becoming a local partner for large continental engineering firms. These firms may already have preferred local partners or internalize the local coordination role.	Medium	Medium
R18	**Client Default or Late Payment**	Especially relevant for small owner-operated hotels and agrotourism with limited liquidity. A single non-payment in Year 1 could represent 37% of annual revenue.	Medium	Medium
R19	**Political / Budget Risk on Energy Transition Subsidies**	IDAE and CAIB subsidy programs depend on public budgets and political priorities. A change of government or budget cut could significantly reduce available co-financing.	Medium	Medium

Table 13. Low level risks

#	Risk	Description	Probability	Impact
R20	**Brain Drain: Loss of Technical Talent from the Balearics**	The market continues to lose engineers to mainland Spain and abroad. This reduces the pool of qualified subcontractors and future hires over time.	High	Low
R21	**Software Obsolescence / Cost Increase**	Key tools (AutoCAD, Revit, CYPE) are subscription-based. Price increases or capability changes could raise OPEX unexpectedly.	Low	Low
R22	**Weak Brand / No Website in Early Phase**	Deliberately delaying the website until 5 projects are completed may limit inbound lead generation and reduce credibility in early client conversations.	Medium	Low

R23	**Tourism Sector Crisis (Demand Shock)**	A severe external shock (e.g., pandemic, major geopolitical event) could trigger a sharp drop in hotel investment, halting the primary revenue pipeline.	Low	High
R24	**AI / Automation Disrupting Basic Engineering Design**	AI-powered engineering tools may commoditize basic design services (HVAC sizing, load calculations), compressing fees at the lower end of the market.	Low	Medium

Then, the risk matrix is shown in Table 14.

Table 14. Risk Matrix

	LOW Impact	**MEDIUM Impact**	**HIGH Impact**
HIGH Probability	**R20**	**R6, R8, R9, R13**	**R1, R2, R3, R4, R5**
MEDIUM Probability	**R22**	**R14, R15, R16, R17, R18, R19**	**R7, R10, R11**
LOW Probability	**R21**	**R24**	**R12, R23**

10.2 RISK MITIGATION

To mitigate the risks identified in the previous chapter, the following mitigation actions will be implemented:

- R1: Actively pursue 5-7 leads simultaneously. Always maintain a pipeline of at least 3 qualified prospects. Diversify across hotels, agrotourism and public sector from day one.
- R2: Offer the first 1-2 projects at cost or free. Leverage personal network from university and prior work experience. Attend FEHM events to build visibility early.

- R3: Build a vetted pool of 3-5 trusted subcontractors before project start. Include contingency clauses in contracts. Pre-negotiate framework agreements with key suppliers.
- R4: Maintain an initial buffer of €23,500. Consider negotiating a higher upfront payment (40%) for early projects. Monitor cash weekly.
- R5: Formalize agreements with 1-2 trusted freelance engineers who could cover urgent tasks. Take out comprehensive accidents and health insurance from Day 1.
- R6: Target public tenders only from Year 2 onward. Use Year 1 to prepare technical certifications and administrative documentation. Focus on private sector for early revenue.
- R7: Deepen local differentiation: faster permitting, island-specific expertise, direct client access. Build referral network that large firms cannot replicate.
- R8: Develop a strong ROI-without-subsidy pitch. Track subsidy calendars proactively. Help clients identify and apply for funding as a value-added service.
- R9: Identify local distributors and pre-order critical long-lead items (e.g., heat pumps, desalination membranes) at project start. Build 2-week buffer into all project schedules.
- R10: Define the hiring trigger explicitly (e.g., sustained revenue >€250k/year). Model the cost of a first employee. Explore associate/part-time engineer structures before full-time hiring.
- R11: Maintain active membership in professional associations (ICAI). Follow IDAE and CAIB regulatory updates monthly. Build modular, adaptable designs.
- R12: Maintain professional liability insurance (€804/year) from Day 1. Apply rigorous internal QA before signing off any design. Use formal project management protocols (ITP).
- R13: Prioritize year-round hotels (Palma city) in early pipeline. For seasonal clients, plan and contract works 3-4 months before the winter closure window opens.

- R14: Conduct detailed sub-contractor cost benchmarking before bidding on EPC projects. Build a 10% contingency into all EPC quotes. Avoid fixed-price EPC contracts in Year 1.
- R15: Develop a standardized ROI calculator for each service type (PV, HVAC, water). Lead every proposal with a clear financial case. Bundle subsidy scenarios to accelerate payback.
- R16: Educate clients on legal liability of using unlicensed providers. Emphasize the value of the official engineering visa and regulatory sign-off in all proposals.
- R17: Actively cold-contact project managers at Sampol, Estel and national EPC firms with presence in Mallorca. Offer a pilot collaboration at low cost to demonstrate reliability.
- R18: Enforce 30% upfront payment before any work commences. Include clear payment milestones and late payment penalties in all contracts. Conduct basic financial due diligence on new clients.
- R19: Develop and stress-test ROI cases without subsidies. Maintain awareness of the political and budget cycle. Diversify client base across segments with different subsidy exposure.
- R20: Partner with UIB (Balearic University, now offering Mechanical Engineering) to build a pipeline of junior talent. Offer internships and mentoring from Year 2 onward.
- R21: Monitor annual license renewals. Evaluate open-source alternatives (FreeCAD) for simpler projects. Budget a 10% annual software cost inflation in financial projections.
- R22: Create a minimal LinkedIn company page and personal profile from Day 1. Use it as a lightweight portfolio. A basic landing page costs <€500 and provides a professional anchor.
- R23: Develop the public administration and industrial segments as revenue diversifiers from Year 2. These are counter-cyclical to tourism demand.

- R24: Embrace AI tools (already budgeted: Claude AI €1,080/yr) to increase productivity. Differentiate on local permitting expertise, project management and client relationship, not just design.

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APPENDIX I: ALIGNMENT WITH SUSTAINABLE DEVELOPMENT GOALS (SDGS)

SDG 7: Affordable and Clean Energy

By implementing advanced energy efficiency measures and integrating renewable sources, the initiative directly optimizes consumption and reduces dependency on non-renewable grids, ensuring a sustainable and cost-effective energy supply.

SDG 6: Clean Water and Sanitation

Given the structural water scarcity in regions like Mallorca, this project prioritizes SDG 6 through technical excellence in water management. The focus on desalination, wastewater reuse, and hydraulic optimization ensures the preservation of local aquifers while securing a reliable water supply for complex infrastructures.

SDG 9: Industry, Innovation, and Infrastructure

The project contributes to SDG 9 by applying specialized engineering to modernize existing HVAC and energy systems. By designing resilient infrastructures and bridging the current investment gap in Spain’s industrial assets, the proposal fosters innovation and increases the operational efficiency of the built environment.

SDG 13: Climate Action

Aligned with global ESG frameworks, this project serves as a strategic tool for SDG 13. Through large-scale electrification and the systematic reduction of carbon footprints, the engineering solutions provided facilitate compliance with increasingly stringent environmental regulations and mitigate the impact of climate change.

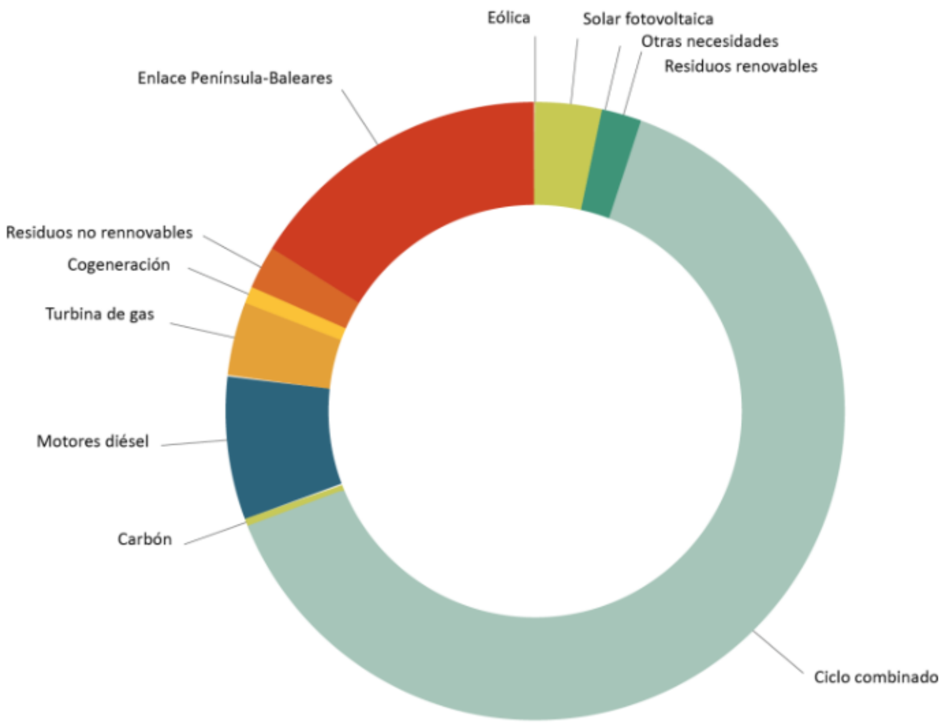
SDG 8: Decent Work and Economic Growth

This initiative is strategically designed to address the professional imbalance in the Balearic Islands, where a dominant hospitality sector often lacks a corresponding high-tech industrial base. By fostering a specialized engineering ecosystem, the project creates high-tier employment opportunities for local technical talent. This directly promotes regional talent retention, providing a professional pathway for Mallorcan engineers who would otherwise be compelled to seek advanced industrial roles abroad. Consequently, the project supports SDG 8 by driving sustainable economic diversification and strengthening the technological autonomy of the region’s primary industry.

Secondary SDGs: Sustainable Communities and Responsible Production

The project further supports SDG 11 and SDG 12 by enhancing the sustainability of tourism-dependent regions through the adaptation of existing hotel infrastructures to modern environmental standards, thereby fostering more resilient urban ecosystems. Simultaneously, it promotes circularity and resource efficiency by minimizing waste within energy and water cycles, ensuring that operational growth does not compromise local resource availability.

APPENDIX II: ADDITIONAL MARKET DATA

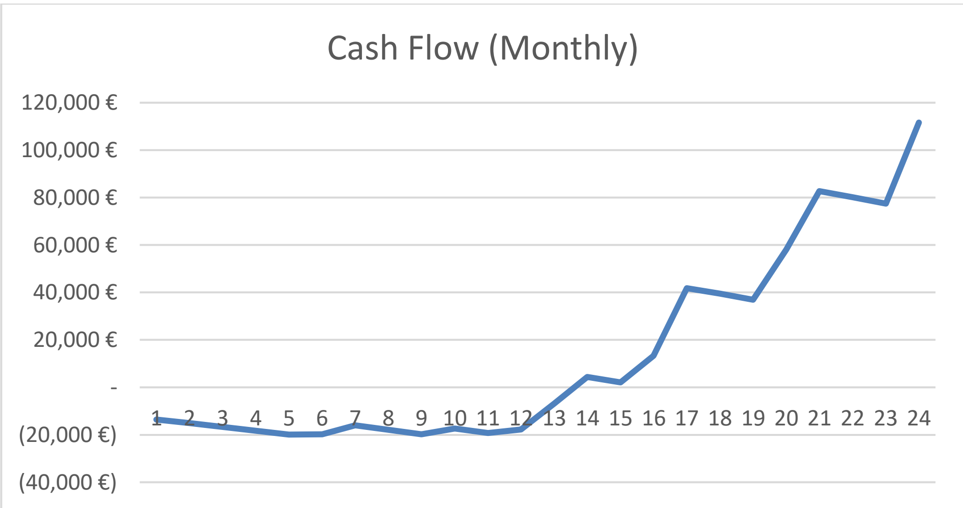


The figure provides an overview of the electricity generation mix, showing a strong dependence on combined-cycle generation as the dominant source, while renewable technologies such as wind and solar photovoltaic represent only a minor share. The mainland–Balearic interconnection also accounts for a relevant part of the supply, reflecting the strategic importance of external electricity support for the islands. Smaller contributions come from diesel engines, gas turbines, cogeneration, coal, non-renewable waste and other renewable sources. Overall, the chart highlights the still limited weight of renewables in the current energy mix, reinforcing the need for further investment in energy efficiency, renewable integration and infrastructure modernization in the Balearic Islands.

APPENDIX III: FINANCIAL PLAN

		YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Revenue Assumptions (project base)						
No. of projects (engineering)	*projects/month*	2	6	9	12	15
Average project value (€)	*€/project*	33,333 €	237,500 €	275,000 €	300,000 €	350,000 €
Engineering fee (%)	*% on value*	4.10%	7.70%	8.00%	8.50%	9.00%
No. of EPC projects	*projects/month*	1	4	2	5	2
Average EPC project value (€)	*€/project*	8,333 €	95,833 €	450,000 €	500,000 €	600,000 €
EPC margin (%)	*% gross margin*	0.80%	2.80%	12.00%	13.00%	15.00%
Collection Assumptions (milestones)						
Upfront payment (%)	*30% upfront*	30.00%	30.00%	30.00%	30.00%	30.00%
Mid-project payment (%)	*40% mid-project*	40.00%	40.00%	40.00%	40.00%	40.00%
Final payment (%)	*30% on completion*	30.00%	30.00%	30.00%	30.00%	30.00%
REVENUE						
Engineering revenue (fees)		28,000 €	110,625 €	198,000 €	306,000 €	472,500 €
EPC revenue (margin)		10,000 €	179,000 €	108,000 €	325,000 €	180,000 €
TOTAL REVENUE		**38,000 €**	**289,625 €**	**306,000 €**	**631,000 €**	**652,500 €**
Variable costs						
Subcontractors / collaborators	*15-22% revenue*	5,700 €	52,133 €	61,200 €	126,200 €	143,550 €
Travel and site visits	*€ / month*	3,050 €	8,400 €	5,000 €	6,000 €	7,000 €
Other variable costs	*materials, etc.*	950 €	1,800 €	2,000 €	2,500 €	3,000 €
TOTAL VARIABLE COSTS		**9,700 €**	**62,333 €**	**68,200 €**	**134,700 €**	**153,550 €**
GROSS MARGIN (Gross Profit)		**28,300 €**	**227,293 €**	**237,800 €**	**496,300 €**	**498,950 €**
% Gross Margin		74.50%	78.50%	77.70%	78.70%	76.50%
FIXED OPERATING EXPENSES (OPEX)						
Freelance / Insurance / Associations						
Freelance Social Security quota	*€/month*	3,000 €	4,800 €	1,500 €	1,800 €	2,000 €
Professional liability insurance	*800€/year*	800 €	800 €	800 €	850 €	900 €
Accident/health insurance	*1000€/year*	1,000 €	1,000 €	1,000 €	1,050 €	1,100 €
Engineering Association (ICAI)	*100€/year(yearly)*	100 €	100 €	100 €	100 €	100 €
Software (annual licenses)						
Microsoft Office 365	*150€/year(yearly)*	230 €	230 €	150 €	150 €	150 €
Claude / AI	*1200€/year (monthly)*	1,080 €	1,080 €	1,200 €	1,200 €	1,400 €
AutoCAD	*2300€/year (monthly)*	2,208 €	2,208 €	2,300 €	2,400 €	2,500 €
Revit	*3000€/year (monthly)*	3,864 €	3,864 €	3,000 €	3,100 €	3,200 €

Administration and Marketing						
Accounting / tax advisory	*1200€/year*	1,200 €	1,200 €	1,200 €	1,200 €	1,400 €
Web / branding / marketing	*startup +web*	2,700 €	2,400 €	1,500 €	1,500 €	2,000 €
Other administrative expenses	*office materials*	1,800 €	1,800 €	700 €	800 €	900 €
TOTAL FIXED COSTS (OPEX)		**17,982 €**	**19,482 €**	**13,450 €**	**14,150 €**	**15,650 €**
INCOME STATEMENT (P&L)						
EBIT (Operating Profit)		**10,318 €**	**207,811 €**	**224,350 €**	**482,150 €**	**483,300 €**
% EBIT margin		27.20%	71.80%	73.30%	76.40%	74.10%
Estimated Income Tax (withholdings)	*15% Y1-Y2 / 20%+ Y3+*	-20,506 €	-34,107 €	-44,870 €	-96,430 €	-106,326 €
NET PROFIT		**-10,188 €**	**173,704 €**	**179,480 €**	**385,720 €**	**376,974 €**
INITIAL INVESTMENT (CAPEX)						
Laptop		2,500 €	-	-	-	-
External monitor		200 €	-	-	-	-
Freelance registration + legal adv.		800 €	-	-	-	-
Branding (logo, web, cards)		1,000 €	-	-	-	-
Permanent software licenses (CYPE)		6,300 €	-	-	-	-
Various / unforeseen		500 €	-	-	-	-
TOTAL CAPEX (initial investment)		**11,300 €**	**-**	**-**	**-**	**-**
CASH FLOW						
Collections (revenue adjusted by milestones)		21,200 €	211,225 €	290,700 €	599,450 €	619,875 €
Payments (total costs)		-38,982 €	-81,815 €	-81,650 €	-148,850 €	-169,200 €
NET CASH FLOW (monthly)		**-17,782 €**	**129,411 €**	**209,050 €**	**450,600 €**	**450,675 €**
Initial buffer	*€ invested*	-	-	-	-	-
ACCUMULATED CASH (balance)		**-17,782 €**	**129,411 €**	**209,050 €**	**450,600 €**	**450,675 €**



			AÑO 1 — Meses												AÑO 2 — Meses											
			M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
SUPUESTOS CLAVE																										
Supuestos de Ingresos (base proyectos)																										
Projects	Nº proyectos (engineering)	*projects/month*	-	-	-	-	-	1	-	-	-	-	-	1	2	-	-	1	-	-	-	1	-	-	-	2
Projects	Valor medio del proyecto (€)	*€/project*	-	-	-	-	-	200,000 €	-	-	-	-	-	200,000 €	225,000 €			225,000 €				250,000 €				250,000 €
Projects	Fee de ingeniería (%)	*% sobre valor*	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	8.0%	8.0%	8.0%	8.0%	8.0%
EPC	Nº proyectos EPC	*project/month*	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	2
EPC	Valor medio proyecto EPC (€)	*€/project*	-	-	-	-	-	-	-	-	-	-	-	100,000 €	-	-	-	350,000 €	-	-	-	400,000 €	-	-	-	400,000 €
EPC	Margen EPC (%)	*% gross margin*	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%	0.0%	0.0%	0.0%	10.0%	0.0%	0.0%	0.0%	12.0%	0.0%	0.0%	0.0%	12.0%
Supuestos de Cobro (milestones)																										
Cobro	Anticipo al inicio (%)	*30% upfront*						30.0%						30.0%	30.0%			30.0%				30.0%				30.0%
Cobro	Pago intermedio (%)	*40% mid-project*						40.0%						40.0%	40.0%			40.0%				40.0%				40.0%
Cobro	Pago final (%)	*30% on completion*						30.0%						30.0%	30.0%			30.0%				30.0%				30.0%
INGRESOS																										
Ingresos	Ingresos engineering (fees)		-	-	-	-	-	14,000 €	-	-	-	-	-	14,000 €	33,750 €	-	-	16,875 €	-	-	-	20,000 €	-	-	-	40,000 €
Ingresos	Ingresos EPC (margen)		-	-	-	-	-	-	-	-	-	-	-	10,000 €	-			35,000 €				48,000 €				96,000 €
INGRESOS TOTALES			**-**	**-**	**-**	**-**	**-**	**14,000 €**	**-**	**-**	**-**	**-**	**-**	**24,000 €**	**33,750 €**			**51,875 €**				**68,000 €**				**136,000 €**
COSTES VARIABLES (% sobre ingresos)																										
Var. Costs	Subcontratistas / colaboradores	*15-22% ingresos*	-	-	-	-	-	2,100 €	-	-	-	-	-	3,600 €	6,075 €	-	-	9,338 €	-	-	-	12,240 €	-	-	-	24,480 €
Var. Costs	Viajes y visitas obra	*€ / month*	100 €	100 €	100 €	100 €	100 €	400 €	350 €	300 €	300 €	300 €	300 €	600 €	600 €	600 €	600 €	600 €	600 €	600 €	800 €	800 €	800 €	800 €	800 €	800 €
Var. Costs	Otros costes variables	*materiales, etc.*	50 €	50 €	50 €	50 €	50 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	200 €	200 €	200 €	200 €	200 €	200 €
TOTAL COSTES VARIABLES			**150 €**	**150 €**	**150 €**	**150 €**	**150 €**	**2,600 €**	**450 €**	**400 €**	**400 €**	**400 €**	**400 €**	**4,300 €**	**6,775 €**	**700 €**	**700 €**	**10,038 €**	**700 €**	**700 €**	**1,000 €**	**13,240 €**	**1,000 €**	**1,000 €**	**1,000 €**	**25,480 €**
MARGEN BRUTO (Gross Profit)			**(150 €)**	**(150 €)**	**(150 €)**	**(150 €)**	**(150 €)**	**11,400 €**	**(450 €)**	**(400 €)**	**(400 €)**	**(400 €)**	**(400 €)**	**19,700 €**	**26,975 €**	**(700 €)**	**(700 €)**	**41,838 €**	**(700 €)**	**(700 €)**	**(1,000 €)**	**54,760 €**	**(1,000 €)**	**(1,000 €)**	**(1,000 €)**	**110,520 €**
	% Margen Bruto		0.0%	0.0%	0.0%	0.0%	0.0%	81.4%	0.0%	0.0%	0.0%	0.0%	0.0%	82.1%	79.9%	0.0%	0.0%	80.7%	0.0%	0.0%	0.0%	80.5%	0.0%	0.0%	0.0%	81.3%
GASTOS OPERATIVOS FIJOS (OPEX)																										
Autónoma / Seguros / Colegios																										
OPEX Fijo	Cuota autónomos	*€/month*	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	400 €	400 €	400 €	400 €	400 €	400 €	400 €	400 €	400 €	400 €	400 €	400 €
OPEX Fijo	Seguro resp. civil profesional	*800€/año*	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €	67 €
OPEX Fijo	Seguro accidentes/salud	*1000€/año*	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €	83 €
OPEX Fijo	Colegio Ingenieros (ICAI)	*100€/año(yearly)*	100 €	-	-	-	-	-	-	-	-	-	-	-	100 €	-	-	-	-	-	-	-	-	-	-	-
Software (licencias anuales)																										
Software	Microsoft Office 365	*150€/año(yearly)*	230 €	-	-	-	-	-	-	-	-	-	-	-	230 €	-	-	-	-	-	-	-	-	-	-	-
Software	Claude / IA	*1200€/año (monthly)*	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €	90 €
Software	AutoCAD	*2300€/año (monthly)*	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €	184 €
Software	Revit	*3000€/año (monthly)*	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €	322 €
Administración y Marketing																										
Admin	Gestoría / asesoría fiscal	*1200€/año*	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €	100 €
Admin	Web / branding / marketing	*arranque +web*	500 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €	200 €
Admin	Otros gastos administrativos	*materiales oficina*	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €	150 €
TOTAL COSTES FIJOS (OPEX)			**2,076 €**	**1,446 €**	**1,446 €**	**1,446 €**	**1,446 €**	**1,446 €**	**1,446 €**	**1,446 €**	**1,446 €**	**1,446 €**	**1,446 €**	**1,446 €**	**1,926 €**	**1,596 €**	**1,596 €**	**1,596 €**	**1,596 €**	**1,596 €**	**1,596 €**	**1,596 €**	**1,596 €**	**1,596 €**	**1,596 €**	**1,596 €**
CUENTA DE RESULTADOS (P&L)																										
EBIT (Beneficio Operativo)			**(2,226 €)**	**(1,596 €)**	**(1,596 €)**	**(1,596 €)**	**(1,596 €)**	**9,954 €**	**(1,896 €)**	**(1,846 €)**	**(1,846 €)**	**(1,846 €)**	**(1,846 €)**	**18,254 €**	**25,049 €**	**(2,296 €)**	**(2,296 €)**	**40,242 €**	**(2,296 €)**	**(2,296 €)**	**(2,596 €)**	**53,164 €**	**(2,596 €)**	**(2,596 €)**	**(2,596 €)**	**108,924 €**
	% EBIT margin		0.0%	0.0%	0.0%	0.0%	0.0%	71.1%	0.0%	0.0%	0.0%	0.0%	0.0%	76.1%	74.2%	0.0%	0.0%	77.6%	0.0%	0.0%	0.0%	78.2%	0.0%	0.0%	0.0%	80.1%
Impuestos	IRPF estimado (retenciones)	*15% Y1-Y2 / 20%+ Y3+*	-	-	-	-	-	(1,493 €)	-	-	-	-	-	(2,738 €)	(3,757 €)	-	-	(6,036 €)	-	-	-	(7,975 €)	-	-	-	(16,339 €)
BENEFICIO NETO			**(2,226 €)**	**(1,596 €)**	**(1,596 €)**	**(1,596 €)**	**(1,596 €)**	**8,461 €**	**(1,896 €)**	**(1,846 €)**	**(1,846 €)**	**(1,846 €)**	**(1,846 €)**	**15,516 €**	**21,292 €**	**(2,296 €)**	**(2,296 €)**	**34,205 €**	**(2,296 €)**	**(2,296 €)**	**(2,596 €)**	**45,189 €**	**(2,596 €)**	**(2,596 €)**	**(2,596 €)**	**92,585 €**
INVERSIÓN INICIAL (CAPEX)																										
CAPEX	Ordenador portátil	*Mac/PC ingeniería*	2,500 €	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CAPEX	Monitor externo		200 €	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CAPEX	Alta autónomo + asesoría legal	*constitución*	800 €	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CAPEX	Branding (logo, web, tarjetas)		1,000 €	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CAPEX	Licencias software permanentes	*Cype licencia permanente*	6,300 €	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CAPEX	Varios / imprevistos		500 €	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL CAPEX (inversión inicial)			**11,300 €**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
FLUJO DE CAJA (CASH FLOW)																										
Cash Flow	Cobros (ingresos ajustados hitos)	*ajuste retrasos pago*	-	-	-	-	-	4,200 €	5,600 €	-	-	4,200 €	-	7,200 €	19,725 €	13,500 €	-	22,763 €	30,875 €	-	-	35,963 €	27,200 €	-	-	61,200 €
Cash Flow	Pagos (costes totales)		(13,526 €)	(1,596 €)	(1,596 €)	(1,596 €)	(1,596 €)	(4,046 €)	(1,896 €)	(1,846 €)	(1,846 €)	(1,846 €)	(1,846 €)	(5,746 €)	(8,701 €)	(2,296 €)	(2,296 €)	(11,634 €)	(2,296 €)	(2,296 €)	(2,596 €)	(14,836 €)	(2,596 €)	(2,596 €)	(2,596 €)	(27,076 €)
CASH FLOW NETO (monthly)			**(13,526 €)**	**(1,596 €)**	**(1,596 €)**	**(1,596 €)**	**(1,596 €)**	**154 €**	**3,704 €**	**(1,846 €)**	**(1,846 €)**	**2,354 €**	**(1,846 €)**	**1,454 €**	**11,024 €**	**11,204 €**	**(2,296 €)**	**11,129 €**	**28,579 €**	**(2,296 €)**	**(2,596 €)**	**21,127 €**	**24,604 €**	**(2,596 €)**	**(2,596 €)**	**34,124 €**
Cash Flow	Colchón inicial (buffer)	€ invertidos						-	-					-	-			-				-				-
CAJA ACUMULADA (saldo)			**(13,526 €)**	**(15,122 €)**	**(16,718 €)**	**(18,314 €)**	**(19,910 €)**	**(19,756 €)**	**(16,052 €)**	**(17,898 €)**	**(19,744 €)**	**(17,390 €)**	**(19,236 €)**	**(17,782 €)**	**(6,758 €)**	**4,446 €**	**2,150 €**	**13,279 €**	**41,858 €**	**39,562 €**	**36,966 €**	**58,093 €**	**82,697 €**	**80,101 €**	**77,505 €**	**111,629 €**
ANÁLISIS BREAK-EVEN																										
Break-even	Punto de equilibrio (ingresos neces	*costes fijos/(1-VC%)*	2,442 €	1,701 €	1,701 €	1,701 €	1,701 €	1,701 €	1,701 €	1,701 €	1,701 €	1,701 €	1,701 €	1,701 €	2,349 €	1,946 €	1,946 €	1,946 €	1,946 €	1,946 €	1,946 €	1,946 €	1,946 €	1,946 €	1,946 €	1,946 €
Break-even	Gap vs. ingresos reales	*+ = por encima BE*	(2,442 €)	(1,701 €)	(1,701 €)	(1,701 €)	(1,701 €)	12,299 €	(1,701 €)	(1,701 €)	(1,701 €)	(1,701 €)	(1,701 €)	22,299 €	31,401 €	(1,946 €)	(1,946 €)	49,929 €	(1,946 €)	(1,946 €)	(1,946 €)	66,054 €	(1,946 €)	(1,946 €)	(1,946 €)	134,054 €